

ABSTRACT OF THE DISCLOSURE

The analysis of the lifetime of objects in a garbage-collected system may be accomplished quickly and effectively using reference counts and cyclic garbage analysis. A reference count is maintained for each of the objects to indicate the number of incoming pointers. Each time the graph structure is altered, the reference counts are updated. Timestamps are recorded each time the reference count for objects change. If a reference count goes to zero, the corresponding object may be indicated as dead. A garbage collection need only be run once (perhaps at the end), and after it is run the system may indicate which objects are cyclic garbage. The timestamps for objects which are cyclic garbage are then reviewed in reverse chronological order. For each timestamp found, the corresponding object and any object reachable from the corresponding object are indicated as dead. These objects are then removed from the set of cyclic garbage.